UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,894	07/03/2001	Steven S. Watanabe	112056-0003	7035

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EXAMINER
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ART UNIT	PAPER NUMBER
2161	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/898,894	WATANABE ET AL.
	Examiner	Art Unit	
	Etienne P LeRoux	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 October 2005_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-45_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-45_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _03 July 2001_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

Claims Status

Claims 1-45 are pending. Claims 1-45 are rejected as detailed below.

Specification

The attempt to incorporate subject matter into this application (page 12, paragraph 1) by reference to Atty. Docket No. 112056-0002 entitled File System Defragmentation Technique via Write Allocation is ineffective because the above document has not been published and thus is ` not publicly available.

Applicant has omitted one or more words from the following sentence which appears on the first line of paragraph 2 on page 15 of the specification:

According to decision step 610, the procedure checks the ...... to determine whether the LOAD phase of the requested transaction can be performed right away.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim

term and set forth the uncommon definition so as to put one reasonably skilled in the art on

notice that the applicant intended to so redefine that claim term. *Process Control Corp. v.*

HydReclaim Corp., 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term

"swarm" in claims 1, 10, 15, 20, 26, 31, 41, 44 and 45 is used by the claim to mean "a multitude

of messages," while the accepted meaning is "group of messages." The term is indefinite

because the specification does not clearly redefine the term.

Claims 2-9, 11-14, 16-19 21-25, 27-30, 32-40, 42 and 43 are rejected for being dependent

fro a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 8-24 and 26-40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over US Pat No 5,440,726 issued to Fuchs et al (hereafter Fuchs) in view of US Pat No

5,588,117 issued to Karp et al (hereafter Karp) and further in view of US Pat No 6,128,762

issued to Jadav et al (hereafter Jadav).

Claims 1, 10, 15, 20, 26, 31, 36 and 37:

Fuchs discloses:

a log in the backup memory containing storage system transaction entries accumulated after a

consistency point at which time results of the transaction entries are committed to the disk array

[Fuchs, col 3, lines 28-33]

Fuchs discloses the essential elements of the claimed invention as noted above but does not

disclose an initiator process that establishes a swarm of messages with respect to the transaction

request entries and delivers the swarm to the file system. Karp discloses an initiator process that

establishes a swarm of messages with respect to the transaction request entries and delivers the

swarm to the file system [Fig 2, col 3, lines 25-45]. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify Fuchs to include an initiator

process that establishes a swarm of messages with respect to the transaction request entries and

delivers the swarm to the file system as taught by Karp for the purpose of establishing a

communications protocol using group ordered message processing [Karp, abstract].

The combination of Fuchs and Karp discloses the essential elements of the claimed invention

as noted above but is silent regarding a disk-information retrieval process in the file system that

is carried out on the swarm of messages in parallel. Jadav discloses a disk-information retrieval

process in the file system that is carried out on the swarm of messages in parallel [Fig 1, col 3,

line 49 through col 4, line 2]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above combination of references to include a disk-information retrieval process in the file system that is carried out on the swarm of messages in parallel as taught by Jadav for the purpose of providing a RAID system which includes parallel computing architecture [Jadav, col 2, lines 4-10].

Claim 2:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 1 as noted above and furthermore, Fuchs discloses wherein each of the messages of the swarm is identified by a transaction block including a pointer to one of the transaction request entries in the log, respectively, and a state that indicates whether each of the messages is one of (a) newly transferred to the file system [col 3, lines 17-26].

Claims 3, 23, 29 and 34:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 1 and 2 as noted above and furthermore, Fuchs discloses wherein the prerequisite event is completion of the load phase and a modify phase with respect to another of the messages [col 14, lines 11-32]

Claims 4, 24, 30 and 35:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 1-3 as noted above and furthermore, Fuchs discloses wherein the initiator process is adapted to retransfer each of the messages incapable of being subject to a load phase until the prerequisite event occurs to the file system for completion of the load phase after the prerequisite event occurs respectively [col 16, lines 39-53]

Claim 8:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 1 as noted

above and furthermore, Fuchs discloses wherein the backup memory comprises a non-volatile

random access memory (NVRAM) [col 3, line 5].

Claim 9:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 1 as noted

above and furthermore, Fuchs discloses wherein the storage system comprises a network storage

appliance [title]

Claim 11:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 10 as noted

above and furthermore, Fuchs discloses wherein each of the messages of the swarm is identified

by a transaction block including a pointer to one of the transaction request entries in the log,

respectively, and a state that indicates whether each of the messages is one of (a) newly

transferred to the file system [col 3, lines 17-26].

Claim 12:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 10 and 11 as

noted above and furthermore, Fuchs discloses wherein the prerequisite event is completion of the

load phase and a modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 13:

The combination of Fuchs, Karp and Jadav of claims 10-12 as noted above and

furthermore, Fuchs discloses wherein the initiator process is adapted to retransfer each of the

messages incapable of being subject to a load phase until the prerequisite event occurs to the file

system for completion of the load phase after the prerequisite event occurs respectively [col 16, lines 39-53]

Claim 14:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 10 as noted above and furthermore, Fuchs discloses wherein the storage system comprises a network storage appliance [Fig 1, item 12 and col 5, lines 57-65]

Claim 16:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 15 as noted above and furthermore, Fuchs discloses establishing for each of the messages of the swarm, a transaction block including a pointer to one of the transaction request entries in the log, respectively, in the log and a state that indicates whether each of the messages is one of :

(a) newly transferred to the file system [col 3, lines 17-26],

Claim 17:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 15 and 16 as noted above and furthermore, Fuchs discloses wherein the prerequisite event is completion of the load phase and a modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 18:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 15-17 as noted above and furthermore, Fuchs discloses wherein the initiator process is adapted to retransfer each of the messages incapable of being subject to a load phase until the prerequisite event occurs to the file system for completion of the load phase after the prerequisite event occurs respectively [col 16, lines 39-53]

Claim 19:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 15 as noted

above and furthermore, Fuchs discloses wherein the storage system comprises a network storage

appliance [Fig 1, item 12 and col 5, lines 57-65].

Claims 21, 27 and 32:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 20 as noted

above and furthermore, Fuchs discloses each of the messages of the swarm is identified by a

transaction block including a pointer to one of the transaction request entries [col 3, lines 17-26].

Claims 22, 28 and 33:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 20 as noted

above and furthermore, Fuchs discloses a state that indicates whether each of the messages is one

of (a) newly transferred to the file system [col 3, lines 17-26].

Claim 23:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 20 and 22 as

noted above and furthermore, Fuchs discloses wherein the prerequisite event is completion of the

load phase and a modify phase with respect to another of the messages [col 14, lines 11-32].

Claim 24:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 20-23 as

noted above and furthermore, Fuchs discloses wherein the initiator process is adapted to

retransfer each of the messages incapable of being subject to a load phase until the prerequisite

event occurs to the file system for completion of the load phase after the prerequisite event

occurs respectively [col 16, lines 39-53]

Claim 27:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 26 as noted

above and furthermore, Fuchs discloses each of the messages of the swarm is identified by a

transaction block including a pointer to one of the transaction request entries [col 3, lines 17-26].

Claim 28:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 20 as noted

above and furthermore, Fuchs discloses a state that indicates whether each of the messages is one

of (a) newly transferred to the file system [col 3, lines 17-26].

Claim 29:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 20 and 28 as

noted above and furthermore, Fuchs discloses wherein the prerequisite event is completion of the

load phase and a modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 30:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 20, 28 and

29 as noted above and furthermore, Fuchs discloses wherein the initiator process is adapted to

retransfer each of the messages incapable of being subject to a load phase until the prerequisite

event occurs to the file system for completion of the load phase after the prerequisite event

occurs respectively [col 16, lines 39-53]

Claim 32:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 31 as noted

above and furthermore, Fuchs discloses each of the messages of the swarm is identified by a

transaction block including a pointer to one of the transaction request entries [col 3, lines 17-26].

Claim 33:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 31 and 32 as

noted above and furthermore, Fuchs discloses a state that indicates whether each of the messages

is one of (a) newly transferred to the file system [col 3, lines 17-26].

Claim 34:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 31 and 32 as

noted above and furthermore, Fuchs discloses wherein the prerequisite event is completion of the

load phase and a modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 35:

The combination of Fuchs, Karp and Jadav discloses the elements of claims 31-34 as

noted above and furthermore, Fuchs discloses wherein the initiator process is adapted to

retransfer each of the messages incapable of being subject to a load phase until the prerequisite

event occurs to the file system for completion of the load phase after the prerequisite event

occurs respectively [col 16, lines 39-53]

Claim 38:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 1 as noted

above and furthermore, Fuchs discloses a third process that modifies at least some messages in

the swarm of messages based on the order in which storage system transactions entries were

stored in the log [col 11, lines 3-19].

Claim 39:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 10 as noted

above and furthermore, Fuchs discloses a third process that modifies at least some messages in

the swarm of messages based on the order in which storage system transactions entries were

accumulated in the log [col 11, lines 3-19].

Claim 40:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 26 as noted

above and furthermore, Fuchs discloses a third process that modifies at least some messages in

the swarm of messages based on the order in which storage system transactions entries were

accumulated in the log [col 11, lines 3-19].

1.   Claims 5 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Fuchs, Karp and Jadav and further in view of Pub No 2003/0131190 issued to

Park et al (hereafter Park).

Claim 5:.

The combination of Fuchs, Karp and Jadav Fuchs discloses the elements of claims 1- 4 as

noted above but does not disclose wherein the initiator is adapted to establish a skip state with

respect to a skipped messages for which a portion of the disk array associated therewith is

unavailable, the skip state thereby omitting the skipped messages from the swarm. Park

discloses wherein the initiator is adapted to establish a skip state with respect to a skipped

messages for which a portion of the disk array associated therewith is unavailable, the skip state

thereby omitting the skipped messages from the swarm [paragraph 9]. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify the above

combination of references to include wherein the initiator is adapted to establish a skip state with

respect to a skipped messages for which a portion of the disk array associated therewith is

unavailable, the skip state thereby omitting the skipped messages from the swarm as taught by

Park. The ordinarily skilled artisan would have been motivated to modify the above combination

of references per the above for the purpose of purpose of skipping defective sectors [paragraph

9].

Claim 25.

The combination of Fuchs, Karp and Jadav discloses the elements of claim 20 as noted

above but does not disclose wherein the initiator is adapted to establish a skip state with respect

to a skipped messages for which a portion of the disk array associated therewith is unavailable,

the skip state thereby omitting the skipped messages from the swarm. Park discloses wherein the

initiator is adapted to establish a skip state with respect to a skipped messages for which a

portion of the disk array associated therewith is unavailable, the skip state thereby omitting the

skipped messages from the swarm [paragraph 9]. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify the above combination of references

to include wherein the initiator is adapted to establish a skip state with respect to a skipped

messages for which a portion of the disk array associated therewith is unavailable, the skip state

thereby omitting the skipped messages from the swarm as taught by Park. The ordinarily skilled

artisan would have been motivated to modify the above combination of references per the above

for the purpose of purpose of skipping defective sectors [paragraph 9].

2.   Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Fuchs, Karp and Jadav and further in view of US Pat No 6,330,570 issued to

Crighton (hereafter Crighton).

Claim 6:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 4 as noted above but fails to disclose wherein the file system includes a panic state adapted to alert an operator if a message received from the initiator in the swarm is a message incapable of being subject to a load phase until a prerequisite event occurs. Crighton discloses a failure in reading a file or writing the file to the backup apparatus triggers a warning message [col 2, lines 34-36]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above combination of references to obtain wherein the file system includes a panic state adapted to alert an operator if a message received from the initiator in the swarm is a message incapable of being subject to a load phase until a prerequisite event occurs. The ordinarily skilled artisan would have been motivated to modify the above combination of references per the above for the purpose of alerting an operator if a backup has not been successfully completed [col 2, lines 26-30].

Claim 7:

The combination of Fuchs, Karp and Jadav discloses the elements of claim 4 as noted above but fails to disclose wherein the file system includes a panic state adapted top alert an operator if a message is retransferred by the initiator process is a message incapable of being subject to a load phase until a prerequisite event occurs. Crighton discloses a failure in reading a file or writing the file to the backup apparatus triggers a warning message [col 2, lines 34-36]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Fuchs '726 and Crighton '726 to include wherein the file system includes a panic state adapted top alert an operator if a message is retransferred by the initiator

process is a message incapable of being subject to a load phase until a prerequisite event occurs.

The ordinarily skilled artisan would have been motivated to modify the combination of Fuchs

and Crighton as per the above for the purpose of alerting an operator if a backup has not been

successfully completed [col 2, lines 26-30].

3.   Claims 41-45 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No

5,440,726 issued to Fuchs et al (hereafter Fuchs).

Claims 41, 44 and 45:

        Fuchs discloses:

        a backup memory storing a plurality of file system transaction entries [Fig 1, 82]

        a second process that performs a load phase in a concurrent manner for a plurality of

messages in the swarm of messages [col 14, lines 11-32]

        a third process that performs a modify phase for at least some messages in the swarm of

messages, the modify phase operating on messages based on the order in which file system

transaction entries were stored in the backup memory [col 11, lines 3-19]

        Fuchs discloses the essential elements of the claimed invention as noted above but does not

disclose a first process that establishes a swarm of messages with respect to the file system.

Karp discloses but does not disclose a first process that establishes a swarm of messages with

respect to the file system [Fig 2, col 3, lines 25-45]. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify Fuchs to include but does

not disclose a first process that establishes a swarm of messages with respect to the file system as

taught by Karp for the purpose of establishing a communications protocol using group ordered

message processing [Karp, abstract].

Claim 42:

The combination of Fuchs and Karp discloses the elements of claim 41 as noted above,

and furthermore, Fuchs discloses a fourth process that determines whether a file system

transaction entry corresponds to a file system transaction that can be performed right away [col

10, lines 15-40]

Claim 43:

The combination of Fuchs and Karp discloses the elements of claims 41 and 42 as noted

above and furthermore Fuchs discloses wherein the fourth process, in response to determining

that the file system transaction cannot be performed right away, associates the file system

transaction entry with a load retry state until a prior prerequisite transaction is performed [col 10,

lines 15-40]

Response to Arguments

Applicant's arguments filed 10/25/2005 have been fully considered and found to be

persuasive but are now moot based on above new grounds of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Etienne P LeRoux whose telephone number is (571) 272-4022.

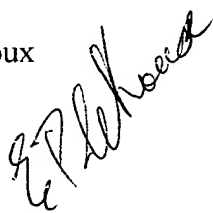The examiner can normally be reached Monday through Friday between 8:00 am and 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

11/29/2005